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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,396	06/06/2000	Richard F. Buckley	19546-020-(E-3915)	9558

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EXAMINER	
TRAN, KHOA H	

ART UNIT	PAPER NUMBER
3634	

DATE MAILED: 11/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/588,396	BUCKLEY, RICHARD F.	
	Examiner	Art Unit	
	Khoa Tran	3634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

The drawings are objected to because Figure 1 is prior art and is not labeled as such, as described in the specification on page 7, lines 15-21 and in applicant's remarks on page 10, lines 15-18. Correction is required.

Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Claim Objections

Claims 1 and 11, line 7, are objected to because "is in" should be --will--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sibley ('230). Sibley ('230) discloses a silicon carbide semiconductor wafer carrier (20) including processes that require the use of high temperatures, see the Abstract and column 1, lines 8-11, column 2, lines 8-9, and column 3, lines 24-25. The

semiconductor wafer boat (20) of Sibley comprising a plurality semiconductor wafers (27), (only one showed), receiving in a plurality of slots position between first and second ends of the boat. The slots comprise the first (left side) and second (right side) upper supporting guides (slots 35) and the lower groove portions (not numbered, defined by an inwardly bend in groove 34, see Figure 1, 3 and 4, or lower groove portion 74, see Figure 5) of which the wafer is in contact and supported by the slots thereon the inwardly bended groove surfaces that are positioned between the bottom supporting groove (30, see Figures 1, 3 and 4, and two grooves define by projections to form supporting legs, not numbered, see Figure 5) and the at least one window (32) positions substantially in a small distance in from the distal end of the boat. The process of making the wafer boat is through a process of involving high heating through a suitable temperature. See columns 7 and 8.

With respect to claims 3 and 13, to one of ordinary skill in the art, it would have been obvious that the silicon carbide would recrystallized itself to a normal state when place in a cooler environment after being removed from the high temperature environment.

With respect to the dimensioning of the wafer and the angle of the wafer relatives to the boat, and the distance of the windows locate from the distal ends of the boat, it would have been an obvious matter of engineering design choice as determined through routine experimentation and optimization for one of ordinary skill in the art to routinely dimension the wafer to have a diameter of about 300mm and the thickness of 5mm, and dimensioning the radius angle from the center to the periphery edge of the wafer relatives to the upper support guides to be in ranges of 10-80 degrees, and dimension

the distance in from the distal end to the window is approximately not more than 10mm for a particular application thus producing no unexpected results. With respect to claim 7, it would have been obvious to one of ordinary skill in the art as a matter of design choice to make duplication in part of the number of slots on the wafer boat in order to accompany the desire number of semiconductor wafers for a particular application thus producing no new matters. Note the applicant's drawings do not show the boat must support 25 wafers. Further, it is not the main inventive concept of the applicant to have a wafer boat design to hold only 25 wafers, see page 12, lines 19-20. With respect to the range of temperatures approximately between 1000 to 1400 degrees of Celsius, it should be noted, the patentability of the reciting structure, itself, that is to be determined and not how the product is to be constructed or the processes of the product arrive, Sibley ('230) discloses the process of making the wafer boat through a high suitable temperature, i.e., 2000 degrees Celsius, see column 8, lines 31-32. Sibley ('230) does not specifically disclose the temperature is to be in ranges of between 1000 to 1400 degrees of Celsius. However, it is well established by case law that it is not inventive to discover the optimum or workable ranges where the general conditions are known in the art. Further, it is expected, as a part of the level of skill would routinely experiment to discover the optimum or workable ranges for a particular use. Accordingly, it would have been an obvious matter of engineering design choice, as determined through routine experimentation and optimization, for one of ordinary skill in the art to dimension the process temperature to be in ranges between 1000 to 1400 degrees Celsius, thus producing no new and unexpected results.

Response to Amendment

Applicant's arguments filed September 04, 2001 have been fully considered but they are not persuasive.

With respect to applicant's remarks on page 13, lines 2-4, that Sibley does not disclose a lower arcuated groove portion of which the wafer is being supported and positioned in the slots, the examiner respectfully disagrees. It should be noted that Figures 1, 3 and 4 of Sibley clearly shows that a lower bend in arcuated groove (34) has a plurality of slots thereon to support the weight of a wafer in each individual slot, or an inwardly bend arcuated lower groove (74) shows in Figure 5. It appears that applicant has failed to define the arcuated groove of invention, instead, relying on the specification to impart the claims limitations not otherwise recited therein. This reliance is ineffective.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khoa Tran whose telephone number is (703) 306-3437. The examiner can normally be reached on Monday through Thursday from 8:30 A.M. to 7:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola, can be reached on (703) 308-2686. The fax phone number for this Group is (703) 305-3597 or (703) 305-3598.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168.

If the applicant is submitted by facsimile transmission, applicant is hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and M.P.E.P. 502.02). In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check **should not be** submitting by facsimile transmission separately from the check. Responses submitted by facsimile transmission should include a Certificate of Transmission (M.P.E.P 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office Fax No. _____ On _____

(Date)

Type or printed name of person signing this certificate:

_____

_____

(Signature)

Furthermore, please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Daniel P. Stodola

Khoa Tran

November 14, 2001

DANIEL P. STODOLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600